

CLAIMS

1. An expandable anode for diaphragm bipolar cells comprising two opposed main surfaces secured to a support structure and separated by a hollow space housing a reversible expansion device in its interior.
2. The anode of claim 1 wherein said opposed main surfaces are provided with openings and coated with a film of catalytic material for chlorine evolution.
3. The anode of claim 1 or 2 wherein said reversible expansion device forces said opposed main surfaces in a spread out position when the anode is assembled in the diaphragm bipolar cell and in a restrained position when the anode is disassembled.
4. The anode of claim 3 wherein the extent of said expansion is preset prior to the cell assemblage.
5. The anode of the previous claims wherein said reversible expansion device comprises a first elastic component fixed to said main surfaces connected to a second mobile component capable of reversibly shifting said main surfaces provoking the expansion or contraction thereof respectively during the cell assembly or disassembly.
6. The anode of claim 5 wherein said mobile component is a pivot provided with spring and stopper.
7. The anode of claim 6 wherein said pivot comprises a first major diameter section capable of bringing said first elastic component to a restrained position, a second minor diameter section connected to said major diameter section by means of a conical junction capable of bringing said first elastic component from a position of maximum expansion to a position of intermediate expansion, a third electrically insulating tip section, said position of maximum expansion and said position of intermediate expansion determined by the distance between the apex of said third tip section and said spring.
8. The anode of claim 7 wherein said third tip section comprises a chemically inert polymeric material.
9. The anode of claim 7 or 8 wherein said distance between the apex of said third tip section and said spring is adjustable.

10. The anode of claim 9 wherein said distance between the apex of said third tip section and said spring is adjusted by rotating said third tip section in a condition of disassembled cell.
11. The anode of claims from 5 to 10 wherein said first elastic component and said second mobile component are made of materials comprising titanium.
12. The anode of claims from 1 to 4 wherein said reversible expansion device comprises a strip secured to said support structure, provided with an elastic section and with a wedge-shaped component determining said expansion of said main surfaces fixed to said strip at the opposed extremity to that secured to said support structure.
13. The anode of claim 12 wherein said elastic section comprises a serpentine.
14. The anode of claim 12 or 13 wherein said wedge-shaped component has an acute angle apex oriented toward said strip.
15. The anode of claim 14 wherein said wedge-shaped component is electrically insulated in at least one planar section opposed to said acute angle apex.
16. The anode of claims from 12 to 15 wherein said wedge-shaped component is obtained by folding and fixing to an additional sheet said strip, and wherein the expansion of said surfaces is adjustable by means of the regulation of said acute angle.
17. The anode of claims from 12 to 16 wherein said strip and said wedge-shaped component are made of materials comprising titanium.
18. A bipolar diaphragm cell comprising an anode of claims 1 to 17.
19. A chlor-alkali electrolyzer comprising at least one cell of claim 18.
20. An anode comprising the characteristic elements of the description and the figures.